

Mineral Industry Surveys

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CHROMIUM IN SEPTEMBER 2002

On the basis of gross weight, consumption of chromium ferroalloys and metal in September 2002 decreased slightly compared with consumption in August 2002, according to the U.S. Geological Survey.

Included in this Mineral Industry Surveys are U.S. salient chromium statistics, U.S. government stockpile inventory of chromium materials in September 2002, U.S. consumption by end use and consumer stocks of chromium ferroalloys and metal at the end of September 2002, and U.S. foreign trade data for selected chromium-containing materials in August 2002.

Update

The Defense National Stockpile Center (DNSC) reported the sale of 8,691 metric tons of ferrochromium valued at \$4.3 million in October 2002. The sale comprised 7,711 metric tons of high-carbon ferrochromium and 980 tons of low-carbon ferrochromium (Defense National Stockpile Center, 2002).

Reference Cited

Defense National Stockpile Center, 2002, Stockpile announces ferrochromium sales for October 2002: Defense National Stockpile Center, news release DNSC-03-2184, October 20, 1 p.

TABLE 1
U.S. SALIENT CHROMIUM STATISTICS 1/

(Metric tons, gross weight)

	2001	2002					
	January- December	First quarter	Second quarter	July	August	September	January- September 2/
Production:							
Stainless steel production 3/	1,820,000	464,000	568,000	186,000	207,000	185,000	1,640,000 4/
Components of U.S. supply:							
Stainless steel scrap receipts	720,000 r/	186,000	224,000	78,500	78,500	67,400	635,000
Stainless steel scrap consumption	1,080,000 r/	274,000	328,000	109,000	110,000	100,000	921,000
Imports for consumption:							
Chromite ore	189,000	43,600	40,500	642	6,220	NA	91,000 5/
Ferrochromium:							
More than 4% carbon	236,000	40,600	68,600	14,200	23,800	NA	147,000 5/
More than 3%, but not more than 4% carbon	20	--	--	--	--	NA	-- 5/
More than 0.5%, but not more than 3% carbon	2,290	2,210	2,900	435	42	NA	5,580 5/
Not more than 0.5% carbon	17,200	4,320	3,110	2,770	582	NA	10,800 5/
Ferrochromium silicon	14,600	5,450	8,270	--	1,500	NA	15,200 5/
Total ferroalloy imports	271,000	52,600	82,900	17,400	25,900	NA	179,000 5/
Chromium metal 6/	8,190	1,810	2,110	689	520	NA	5,130 5/
Stainless steel	761,000	218,000	196,000	54,100	63,500	NA	531,000 5/
Stainless steel scrap	42,300	10,600	17,100	11,700	10,200	NA	49,500 5/
Distribution of U.S. supply:							
Consumption:							
Chromium ferroalloys & metal	338,000 r/	87,000	94,500 r/	31,200	32,200	32,100	277,000
Exports:							
Chromite ore	61,000	1,570	18,300	335	345	NA	20,500 5/
Chromium ferroalloys:							
High-carbon ferrochromium	8,390	855	1,370	237	608	NA	3,070 5/
Low-carbon ferrochromium	7,880	562	407	157	86	NA	1,210 5/
Ferrochromium silicon	86	17	127	--	76	NA	221 5/
Total ferroalloy exports	16,400	1,430	1,900	394	771	NA	4,500 5/
Chromium metal	1,040	124	152	25	38	NA	338 5/
Stainless steel	249,000	57,400	66,800	21,400	35,600	NA	181,000 5/
Stainless steel scrap	438,000	90,600	111,000	27,200	20,100	NA	248,000 5/
Stocks at end of period:							
Industry:							
Chromium ferroalloys and metal, consumer	28,000	XX	XX	13,800	13,700	13,900	XX
Government stockpile:							
Chromite ore	394,000	XX	XX	254,000	191,000	191,000	XX
Chromium ferroalloys	811,000	XX	XX	535,000	782,000	778,000	XX
Chromium metal	7,220	XX	XX	7,210	7,220	7,220	XX

r/ Revised. NA Not available. XX Not applicable. -- Zero.

1/ Data are rounded to no more than three significant digits; may not add to totals shown.

2/ May include revised data.

3/ Data on stainless steel production reported by American Iron and Steel Institute; monthly, quarterly, and year-to-date production of stainless and heat-resisting raw steel.

4/ Includes revised data which is not broken out by specific month.

5/ Includes data for January through August; September data not available.

6/ Includes waste and scrap and other.

TABLE 2
U.S. REPORTED CONSUMPTION AND STOCKS OF CHROMIUM PRODUCTS IN 2002 1/

(Metric tons, gross weight unless otherwise noted)

	August	September	January- September 2/
Consumption by end use:			
Alloy uses:			
Iron alloys:			
Steel:			
Carbon steel	480 r/	425	4,080
High-strength low-alloy steel	1,090 r/	1,120	9,720
Stainless and heat-resisting steel	27,200	27,200	232,000
Full alloy steel	1,460	1,310	12,100
Electrical steel	W	W	W
Tool steel	381	456	4,440
Cast irons	W	W	W
Superalloys	602 r/	670	5,900
Other alloys 3/	123 r/	117	1,090
Total	32,200	32,100	277,000
Total, chromium content	18,900	18,100	158,000
Consumption by material:			
Low-carbon ferrochromium	1,740	1,830	15,500
High-carbon ferrochromium	24,900 r/	24,900	215,000
Ferrochromium silicon	5,170	5,100	43,300
Chromium metal	237 r/	258	2,440
Chromite ore	W	W	W
Chromium-aluminum alloy	44 r/	37	368
Other chromium materials	W	W	W
Total	32,200	32,100	277,000
Total, chromium content	18,900	18,100	158,000
Consumer stocks:			
Low-carbon ferrochromium	2,240	2,300	XX
High-carbon ferrochromium	10,100	10,400	XX
Ferrochromium silicon	1,010	868	XX
Chromium metal	208 r/	212	XX
Chromite ore	W	W	XX
Chromium-aluminum alloy	30	21	XX
Other chromium materials	W	W	XX
Total	13,700	13,900	XX
Total, chromium content	8,450 r/	8,260	XX

r/ Revised. W Withheld to avoid disclosing company proprietary data; included in "Total." XX Not applicable.

1/ Data are rounded to no more than three significant digits; may not add to totals shown.

2/ May include revised data.

3/ Includes welding and alloy hard-facing rods and materials, wear- and corrosion-resistant alloys, and aluminum, copper, magnetic, nickel, and other alloys.

TABLE 3
U.S. GOVERNMENT STOCKPILE INVENTORY OF CHROMIUM MATERIALS 1/

(Metric tons)

Period	Chromite ore			Chromium ferroalloys			Chromium metal		Total
	Chemical	Metal-lurgical	Refractory	High-carbon ferro-chromium	Low-carbon ferro-chromium	Ferro-chromium silicon	Alumino-thermic	Electrolytic	
2001:									
October	192,000	--	202,000	561,000	243,000	9,600	NA	NA	7,220
November	192,000	--	202,000	561,000	243,000	6,970	NA	NA	7,220
December	192,000	--	202,000	561,000	243,000	6,970	NA	NA	7,220
2002:									
January	192,000	--	111,000	561,000	243,000	6,970	NA	NA	7,220
February	192,000	--	111,000	558,000	239,000	6,970	NA	NA	7,220
March	192,000	--	111,000	558,000	239,000	6,970	NA	NA	7,220
April	192,000	--	111,000	558,000	239,000	3,100	NA	NA	7,220
May	192,000	--	111,000	558,000	239,000	3,100	NA	NA	7,220
June	78,300	--	175,000	374,000	163,000	--	NA	NA	7,210
July	78,300	--	175,000	372,000	163,000	--	NA	NA	7,210
August	78,300	--	113,000	547,000	235,000	--	NA	NA	7,220
September	78,300	--	113,000	544,000	234,000	--	NA	NA	7,220
October	78,300	--	127,000	536,000	233,000	--	NA	NA	7,220

NA Not available. -- Zero.

1/ Data are rounded to no more than three significant digits.

2/ Total uncommitted inventory from Defense National Stockpile Center report Inventory of Stockpile Material R-1.

Source: Defense National Stockpile Center.

TABLE 4
U.S. EXPORTS OF CHROMITE ORE, CHROMIUM FERROALLOYS, AND METAL 1/

Period	Chromite ore		Chromium ferroalloys 2/			Chromium metal 3/	
	Gross weight (metric tons)	Value (thousands)	Gross weight (metric tons)	Chromium content (metric tons)	Value (thousands)	Gross weight (metric tons)	Value (thousands)
2001:							
August	26,500	\$1,760	300	178	\$326	26	\$442
September	205	302	408	246	424	74	571
October	13,000	810	689	437	611	38	570
November	550	244	851	571	750	29	430
December	168	56	232	144	186	62	490
January-December	61,000	6,680	16,400	8,800	12,500	1,040	10,700
2002:							
January	350	210	463	288	472	53	450
February	988	572	394	233	393	44	224
March	234	106	577	354	513	27	447
April	528	822	674	412	652	80	699
May	494	153	774	452	686	48	493
June	17,200	824	456	261	416	24	265
July	335	89	394	240	369	25	366
August	345	61	771	469	577	38	414
January-August	20,500	2,840	4,500	2,710	4,080	338	3,360

1/ Data are rounded to no more than three significant digits; may not add to totals shown.

2/ Includes low-, medium-, and high-carbon ferrochromium and ferrochromium silicon.

3/ Includes unwrought powders and chromium metal waste and scrap.

Source: U.S. Census Bureau.

TABLE 5
U.S. IMPORTS FOR CONSUMPTION OF CHROMITE ORE, FERROCHROMIUM, AND CHROMIUM METAL 1/

(Metric tons)

	2001	2002			
	January- December	June	July	August	January- August 2/
Chromite ore:					
Not more than 40% chromic oxide:					
Gross weight	1,600	46	198	226	754
Chromic oxide content	575	16	75	44	192
More than 40% but less than 46% chromic oxide:					
Gross weight	3,100	--	--	20	10,500
Chromic oxide content	1,430	--	--	9	4,430
46% or more chromic oxide:					
Gross weight	184,000	502	444	5,980	79,700
Chromic oxide content	88,600	250	224	2,770	37,200
Total, all grades:					
Gross weight	189,000	548	642	6,220	91,000
Chromic oxide content	90,600	266	299	2,830	41,800
Ferrochromium:					
Low-carbon: 3/					
Not more than 0.5%:					
Gross weight	17,200	1,040	2,770	582	10,800
Chromium content	11,800	728	1,660	408	7,140
More than 0.5% but not more than 3%:					
Gross weight	2,290	300	435	42	5,580
Chromium content	1,440	182	298	25	3,510
Total, low-carbon:					
Gross weight	19,500	1,340	3,210	624	16,400
Chromium content	13,200	910	1,950	433	10,600
Medium-carbon: 4/					
Gross weight	20	--	--	--	--
Chromium content	13	--	--	--	--
High-carbon: 5/					
Gross weight	236,000	19,300	14,200	23,800	147,000
Chromium content	137,000	12,300	7,490	15,000	91,000
Total, all grades:					
Gross weight	256,000	20,600	17,400	24,400	164,000
Chromium content	150,000	13,200	9,440	15,500	102,000
Chromium metal:					
Other than waste and scrap	8,150	489	687	502	5,060
Waste and scrap	43	4	2	19	76
Total, all grades	8,190	493	689	520	5,130

-- Zero.

1/ Data are rounded to no more than three significant digits; may not add to totals shown.

2/ May include revised data.

3/ Ferrochromium containing not more than 3% carbon.

4/ Ferrochromium containing more than 3% but not more than 4% carbon.

5/ Ferrochromium containing more than 4% carbon.

Source: U.S. Census Bureau.

TABLE 6
U.S. IMPORTS FOR CONSUMPTION OF CHROMITE ORE IN 2002, BY GRADE AND BY COUNTRY 1/

Grade and country	August			January-August 2/		
	Gross weight (metric tons)	Cr2O3 (metric tons)	Value 3/ (thousands)	Gross weight (metric tons)	Cr2O3 (metric tons)	Value 3/ (thousands)
Not more than 40% chromic oxide:						
Canada	--	--	--	38	13	\$15
Philippines	217	41	\$41	687	169	122
South Africa	9	3	2	29	10	7
Total	226	44	43	754	192	143
More than 40% but less than 46% chromic oxide, South Africa	20	9	4	10,500	4,430	697
46% or more chromic oxide:						
Germany	18	9	5	18	9	5
South Africa	5,960	2,760	323	79,700	37,200	3,870
Total	5,980	2,770	328	79,700	37,200	3,870
All grades:						
Canada	--	--	--	38	13	15
Germany	18	9	5	18	9	5
Philippines	217	41	41	687	169	122
South Africa	5,990	2,780	330	90,300	41,600	4,570
Total	6,220	2,830	375	91,000	41,800	4,710

-- Zero.

1/ Data are rounded to no more than three significant digits; may not add to totals shown.

2/ May include revised data.

3/ Customs import value generally represents a value in the foreign country and therefore excludes U.S. import duties, freight, insurance, and other charges incurred in bringing the merchandise into the United States.

Source: U.S. Census Bureau.

TABLE 7
U.S. IMPORTS FOR CONSUMPTION OF FERROCHROMIUM IN 2002, BY GRADE AND BY COUNTRY 1/

Grade and country	August			January-August 2/		
	Gross weight (metric tons)	Chromium content (metric tons)	Value 3/ (thousands)	Gross weight (metric tons)	Chromium content (metric tons)	Value 3/ (thousands)
High-carbon ferrochromium: 4/						
China	20	13	\$23	74	49	\$85
Germany	1,520	1,050	670	6,120	4,260	2,850
Kazakhstan	15,500	10,700	5,940	76,400	52,600	27,000
Russia	--	--	--	1,560	1,070	1,420
South Africa	6,730	3,310	2,320	53,400	27,200	12,900
Turkey	--	--	--	3,500	2,110	1,090
Venezuela	--	--	--	20	14	12
Zimbabwe	--	--	--	6,140	3,700	2,230
Total	23,800	15,000	8,960	147,000	91,000	47,500
Low-carbon ferrochromium: 5/						
More than 0.5% but not more than 3% carbon:						
Kazakhstan	--	--	--	1,660	1,160	1,160
Russia	--	--	--	991	695	884
South Africa	42	25	34	2,930	1,660	1,310
Total	42	25	34	5,580	3,510	3,350
Not more than 0.5% carbon:						
China	--	--	--	40	26	47
France	--	--	--	4	3	5
Germany	424	297	702	2,170	1,520	3,960
Japan	140	98	296	821	574	1,700
Kazakhstan	--	--	--	1,350	956	1,010
Russia	18	13	22	3,770	2,520	3,700
South Africa	--	--	--	2,370	1,350	1,190
Turkey	--	--	--	259	188	286
Total	582	408	1,020	10,800	7,140	11,900
All grades:						
China	20	13	23	114	75	132
France	--	--	--	4	3	5
Germany	1,940	1,350	1,370	8,290	5,780	6,810
Japan	140	98	296	821	574	1,700
Kazakhstan	15,500	10,700	5,940	79,400	54,700	29,100
Russia	18	13	22	6,320	4,280	6,000
South Africa	6,770	3,340	2,360	58,700	30,200	15,400
Turkey	--	--	--	3,760	2,300	1,380
Venezuela	--	--	--	20	14	12
Zimbabwe	--	--	--	6,140	3,700	2,230
Total	24,400	15,500	10,000	164,000	102,000	62,800

-- Zero.

1/ Data are rounded to no more than three significant digits; may not add to totals shown.

2/ May include revised data.

3/ Customs import value generally represents a value in the foreign country and therefore excludes U.S. import duties, freight, insurance, and other charges incurred in bringing the merchandise into the United States.

4/ Ferrochromium containing more than 4% carbon.

5/ Ferrochromium containing not more than 3% carbon.

Source: U.S. Census Bureau.

TABLE 8
U.S. IMPORTS FOR CONSUMPTION OF CHROMIUM METAL IN 2002,
BY GRADE AND BY COUNTRY 1/

Grade and country	August		January-August 2/	
	Gross weight (metric tons)	Value 3/ (thousands)	Gross weight (metric tons)	Value 3/ (thousands)
Waste and scrap:				
Germany	--	--	14	\$201
Japan	--	--	23	154
Korea, Republic of	--	--	3	14
Netherlands	8	\$29	8	29
Russia	11	190	28	542
Total	19	219	76	941
Other than waste and scrap:				
Austria	--	--	(4/)	5
China	242	900	1,170	4,510
France	73	516	1,200	9,660
Germany	1	72	25	410
Italy	--	--	2	92
Japan	5	66	10	136
Kazakhstan	100	377	365	1,460
Liechtenstein	(4/)	9	(4/)	20
Netherlands	--	--	7	29
Russia	80	297	1,360	5,880
Singapore	--	--	(4/)	7
Spain	(4/)	5	(4/)	5
Switzerland	(4/)	3	(4/)	17
Taiwan	--	--	2	13
United Kingdom	1	7	914	5,810
Total	502	2,250	5,060	28,100
All grades:				
Austria	--	--	(4/)	5
China	242	900	1,170	4,510
France	73	516	1,200	9,660
Germany	1	72	39	611
Italy	--	--	2	92
Japan	5	66	33	290
Kazakhstan	100	377	365	1,460
Korea, Republic of	--	--	3	14
Liechtenstein	(4/)	9	(4/)	20
Netherlands	8	29	15	58
Russia	90	487	1,390	6,420
Singapore	--	--	(4/)	7
Spain	(4/)	5	(4/)	5
Switzerland	(4/)	3	(4/)	17
Taiwan	--	--	2	13
United Kingdom	1	7	914	5,810
Total	520	2,470	5,130	29,000

-- Zero.

1/ Data are rounded to no more than three significant digits; may not add to totals shown.

2/ May include revised data.

3/ Customs import value generally represents a value in the foreign country and therefore excludes U.S. import duties, freight, insurance, and other charges incurred in bringing the merchandise into the United States.

4/ Less than 1/2 unit.

Source: U.S. Census Bureau.

TABLE 9
U.S. TRADE OF STAINLESS STEEL, BY PRODUCT, IN 2002 1/

Stainless steel product	August		January-August 2/	
	Gross weight (metric tons)	Value 3/ (thousands)	Gross weight (metric tons)	Value 3/ (thousands)
Exports:				
Ingot	6,680	\$8,720	16,200	\$40,200
Flat-rolled (width > 600 mm)	15,600	25,600	62,700	135,000
Flat-rolled (width < 600 mm)	9,320	17,000	64,900	133,000
Bars and rods in irregular coils	137	785	963	4,060
Other bars and rods	1,170	5,500	11,100	59,600
Wire	777	4,950	7,460	50,700
Tubes, pipes, hollow profiles	1,920	9,290	17,900	76,300
Total	35,600	71,800	181,000	499,000
Stainless steel scrap	20,100	17,200	248,000	173,000
Grand total	55,700	89,000	430,000	672,000
Imports:				
Ingot	20,200	23,800	207,000	232,000
Flat-rolled (width > 600 mm)	21,800	33,300	157,000	234,000
Flat-rolled (width < 600 mm)	2,810	7,890	22,400	68,100
Bars and rods in irregular coils	4,540	7,740	37,300	61,400
Other bars and rods	6,550	13,900	47,300	108,000
Wire	2,460	7,470	19,200	60,100
Tubes, pipes, hollow profiles	5,100	18,700	40,700	162,000
Total	63,500	113,000	531,000	926,000
Stainless steel scrap	10,200	4,920	49,500	30,400
Grand total	73,600	118,000	581,000	957,000

1/ Data are rounded to no more than three significant digits; may not add to totals shown.

2/ May include revised data.

3/ Export value is free alongside ship (f.a.s.). Import value is Customs import value, which generally represents a value in the foreign country and therefore excludes U.S. import duties, freight, insurance, and other charges incurred in bringing the merchandise into the United States.

Source: U.S. Census Bureau.